

## TUA6041-2

### Digitally Aligned, Full 3-Band, Low Power RF Tuner IC with Integrated IF AGC



T U A 6 0 4 1 - 2 is an advanced Tuner IC with digital alignment requiring a minimum supply voltage of only 3 V. This IC incorporates a mixer-oscillator function and an IF AGC amplifier with a digitally programmable phase locked loop (PLL) for use in portable TV tuners. Both analog and digital standards for all terrestrial and cable applications are supported. The automatic digital alignment feature enables the use of SMD coils in the tuner design which allows for great reduction in the overall tuner size.

#### Applications

- Suitable for PAL, SECAM, NTSC, DVB-C, DVB-T, T-DMB, DAB, ISDB-T, ATSC and digital-analog hybrid tuners
- Focus on digital terrestrial portable applications where low power consumption is an advantage

#### Features

- Supply voltage from 3 to 5 V
- BiCMOS technology for highest performance
- Combined narrow and wide-band AGC detection
- AGC buffer output
- Low phase noise
- Full ESD protection
- Power consumption: <200 mW
- 3-Band tuner covers VHF upto L-band (1.5 GHz range)

#### Mixer / Oscillator

- Full 3-band tuner
- RF inputs
  - VHF low unbalanced high ohmic
  - VHF mid balanced low ohmic
  - UHF - four pin
- UHF/L-band balanced low ohmic, Oscillators:
  - VHF low/mid two pin/ UHF/L-band four pin

#### IF-Amplifier

- 4 IF pins to connect a true 2 pole band pass
- Symmetrical SAW driver
- Fully balanced IF AGC amplifier

#### PLL

- I<sup>2</sup>C / three wire combi bus
- 4 independent I<sup>2</sup>C addresses, pin-programmable
- High voltage VCO tuning output
- Two PMOS ports
- One voltage-referred port
- Internal LOW/MID/HIGH band-switch
- X-tal oscillator, range from 4 to 16 MHz
- X-tal buffer output programmable level and output divider
- Clock generator for DC/DC converter with programmable high and low time

#### Power Management

- Bus controlled standby mode
- Standby of most circuit blocks, can be controlled independently

#### Digital Alignment

- 3 DACs for digital alignment, control range up to 5 volts
- Use of SMD coils for pre-stage tuner
- Alignment of 30 V tuning voltage pre-stage

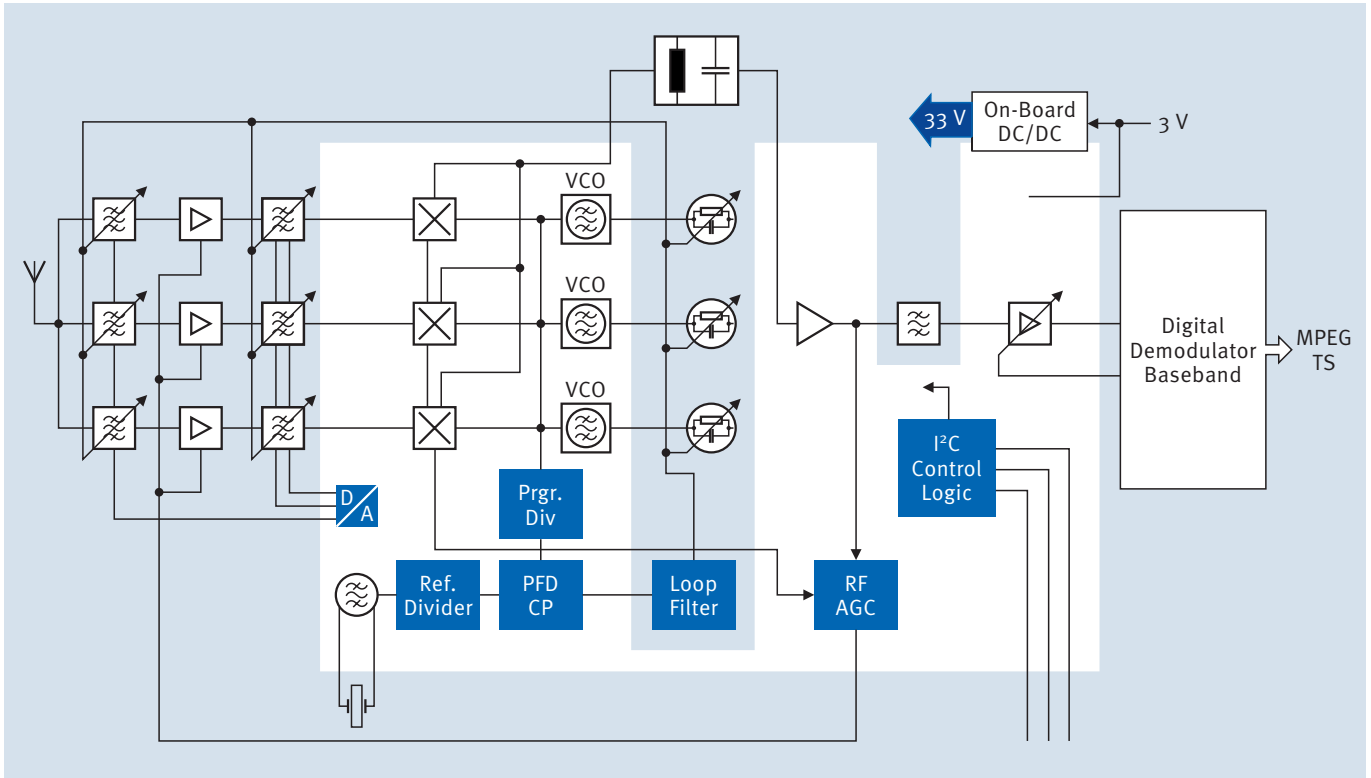
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## Communication Solutions



Never stop thinking

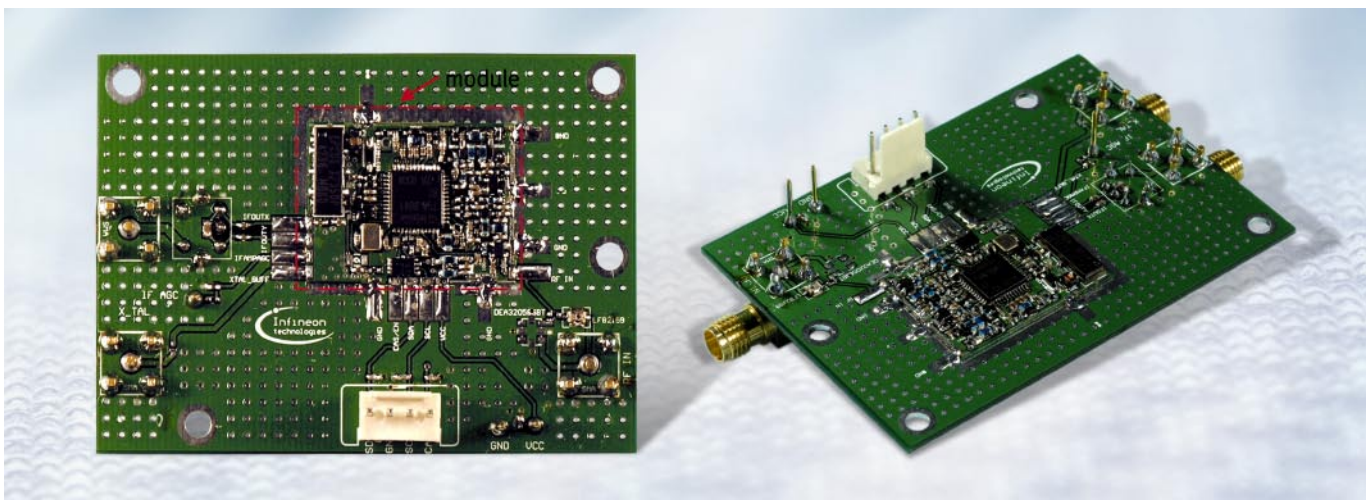
## Block Diagram



## Product Summary

Type	Description	Package
TUA6041-2	SP000250163	PG-VQFN-48
TUA6041-2 Evaboard	via ISaR	PG-VQFN-48

## Reference Tuner Design (DVB - T/H UHF) Module: 27 x 20 mm



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